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ABSTRACT

Proposing that the utility of formal grammar instruction has never been put to the test, this booklet first explains the heretofore negative research results and explains why all the good intentions behind them have not kept those results from being essentially useless. The remainder of the booklet describes an experiment in which there were no textbooks, grammar books, outside reading, homework, drills, lectures, prewriting, revision, or outside assigned writing. Two experimental classes of remedial English students were given in-class essays to write and grammatical problems to solve. (A sample problem is presented.) The final test results were compared to test results of four control classes, showing no difference between the experimental and the control groups. (HOD)

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THE GREAT GRAMMAR MYTH

by

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National Writing Project
Occasional Paper No. 5

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My purpose in this paper is to attack a shibboleth; I firmly believe that when that's what you're up to you should be forthright about it. Especially when the shibboleth is one dear to the majority of Language Arts teachers today—although my own ninth grade English teacher (who had us study Franklin's list of virtues, but refused to discuss the one called "chastity") would have fainted dead away if she'd ever heard it expressed.[1] I refer to the following little ditty, and would cross-stitch it here for you if technology allowed:

THE FORMAL TEACHING OF GRAMMAR IN LANGUAGE ARTS CLASSROOMS IS A WASTE OF TIME.

Four arguments are ordinarily marshalled in *support* of the shibboleth, and they are:

1) Students don't learn the stuff anyway, no matter how much you drill them and lecture them and carry on about it, and no matter how many years you devote to the process.

2) If the students do accidentally learn something, however fragmentary, there is no positive correlation between that learning and their performance in the Language Arts.

3) The formal teaching of grammar creates in the students a hatred not just for the study of their native language but for the study of any language whatsoever until the end of time.

4) The Language Arts curriculum is already too crowded, and our resources too over-extended, to let us include anything so obviously useless—if not downright harmful.

Now these four arguments have not gone unsupported by research; on the contrary, there are whole librarysful of books claiming to describe just such research. But the material has had numerous problems, until recently. It has tended to be from very old studies—ancient studies, in today's terms—that were so without controls that they are impossible to judge in any fair way. Often they were little more than anecdotal accounts; typically they included very small groups of students; typically they were carried out over very brief periods of time. And almost never was there any attempt to control the multitude of possible variables that might have been crucial to interpretation of the work. Using them as evidence for one's reluctance to teach grammar had become embarrassing.

In response to this situation, I rather expect, a new and quite different study has been carried out by W. B. Elley, I. H. Barham, H. Lamb and M. Wylie. Their research suffers from none of the flaws that made the body of earlier work so awkward to deal with; it was scrupulously designed to meet the most rigorous requirements of the scientific method. The results of that study, along with much useful information about earlier ones, are reported in *The Role of Grammar in a Secondary School Curriculum,* published in 1979.[2]

The authors of this extremely valuable book intended to test our shibboleth for once and for all, and perhaps to make it impossible for a teacher who wanted to present formal grammar in the classroom to say "Oh, well, all the research that says it's not a good idea is so much antiquated hogwash anyway." What they found out is summed up on the back cover of the book in a way that pulls no punches:

> The conclusion is thus overwhelming: instruction in grammar has no practical justification, even if it may be justified on humanistic grounds.

I am sure that the authors of this study thought they had at last definitively settled the question, and could tack up the "Don't Waste Your Time Teaching Grammar" principle beside such venerable items as "All Substitute Teachers Are Going to Have the Dickens of a Time" and "If You Don't Have Enough Pencils to Go Around, It Causes Problems." They were entitled to think so, having done all their homework and done it right. But I am very much afraid that they have failed...through no fault of their own.

I intend to propose that despite all the research, including the most recent, the question of the utility of formal grammar instruction has *never yet been put to the test.* Furthermore, I intend to explain the heretofore negative research results, and to explain why all the good intentions behind them have not kept those results from being essentially useless.[3]

I'd like for you to imagine an alien race, please. An alien race, all of whose infants are born with the innate ability to *induce* arithmetic generalizations from raw data. The infants are surrounded by arithmetic facts in the environment, and from those they work out such generalizations as this: if you add any number to any other number, you will get the same sum no matter which direction you add in. That is, if 3 and 4 equal 7, 4 and 3 will also equal 7.

They master all these generalizations well below the level of conscious awareness, which means that they can't explain either *that* they know them or *how* they know them. But they proceed to operate in their real alien world on the basis of what they know.

And then the alien children start off to school; and once they get there they are forced to take year after year after year of Arithmetic Arts; and in Arithmetic Arts they are required to memorize pseudo-facts in total conflict with their internalized knowledge. For example: they are required to memorize

a rule saying that if 3 and 4 equal 7, 4 and 3 also equal 7, *except* when the moons are full, at which time the sum of 4 and 3 will be either 9 or 14, depending on the outdoor temperature, while the sum of 3 and 4 will always remain 7. And they are taught a complex formula for using the outdoor temperature to determine whether 9 or 14 is the proper answer to 4 plus 3 on any given moonsful night.

Not only must they learn this, you understand, but they must behave as if they believe it; otherwise they will not pass Arithmetic Arts and they will end up in remedial classes. Furthermore, a sizeable percentage of these students are expected to grow up and teach all this stuff to the next generation of alien children.

I assure you, if you were to examine a system of that kind, and if you subjected it to the most intensive and rigorous research, you would learn four things: (1) the students wouldn't learn those arithmetic rules; (2) any rules learned accidentally would not transfer to the students' corresponding real world performance in arithmetic; (3) the students would detest and despise the study of arithmetic and everything connected to it in even the most trivial way; and thus, (4) formal arithmetic instruction would be demonstrably a waste of time and space and effort in the crowded alien curriculum.

To return to Earth: human infants, Terran infants, are born with the ability to induce *grammatical* generalizations from raw data. They learn languages just from what goes on around them. The rules that they work out, and which determine their language behavior, are internalized well below the level of conscious awareness.[4]

They master the system of rules, using their innate abilities, and they use it as they go about their daily life speaking and understanding. And then they start school, and are required to take year after year after year of Language Arts—in which they are forced to study pseudo-facts in total conflict with the truth that they know; to behave as if they believed those pseudo-facts; and (for a sizeable proportion) to go on to become teachers of language arts who devote their professional lives to drumming those pseudo-facts into the next academic generation of Terran children.

It doesn't work, of course. The same thing happens that happened to our alien friends, the same four principles emerge, and nobody—nobody at all—should find that surprising.

Let's look first at traditional grammar for an example or two of the sorts of things that we teach in our Language Arts classes. There is, for instance, a rule saying that a pronoun is a word which replaces the noun that is its antecedent. That rule is a lie, most of the time; and I'm happy to say that the study by Elley *et al.* points out that it is a lie, in nontechnical terms and without resorting to squiggles. Consider a sentence like this one:

a. I was looking for the little white dog, but I couldn't find the little white dog.

Apply the pronoun rule to that unlikely sentence, and this will be the result:

b. I was looking for the little white dog, but I couldn't find the little white it.

That's what will happen if you replace the noun which is the antecedent with its corresponding pronoun, you see. And you will notice that it does not happen. The children may learn the rule, after a fashion, or they may not, but they most assuredly do not *use* the silly thing. They go right ahead and substitute the pronoun for the noun, *and* its accompanying adjective or adjectives, *and* its accompanying determiner, which is how it's done by every native speaker of English.

Or consider the examples below, demonstrating what would happen if our students took our pronoun rule seriously:

c. When the woman who was applying for the job sat down across the desk from me, I smiled at the her who was applying for the job.

d. When Mary was told that the rule could not possibly work, she replied that she didn't believe that the it could not possibly work.

You are perfectly justified if you react to such syntactic grotesques with an indignant insistence that *no* native speaker of English would ever produce them—but that is precisely my point. The native speakers are obviously following some other rule (one that works in the real world) and we should not be surprised at the way they keep forgetting our pseudo-rule.

Another thing we teach our students in traditional grammar is a body of incantations about an alleged part of speech known as the "adverb." I believe English teachers will *pay,* and *pay,* and *pay,* come any variety of day of judgment, for what they have done to innocent children in the name of the adverb. And they will not have one legitimate word to say in their own defense, since half an hour's observation of their own language behavior will demonstrate without question that they don't go by the stuff they teach about adverbs any more than their students do. For example:

Among the things said to be "adverbs" are the four words *now, then, here, there.* Consider the following sentence:

e. John went to Paris, but I've never been to Paris.

And its more likely counterpart:

f. John went to Paris, but I've never been there.

Or this set:

g. We wanted to leave at dawn, but Mary wasn't ready at dawn.

h. We wanted to leave at dawn, but Mary wasn't ready then.

The most superficial examination of sentences like these will show you that *here, there, then, now* are pronouns dutifully replacing the noun phrases that are their antecedents.[3] (They are certainly not adverbs, whatever an adverb might be.) Not only that, in order to use them properly the student must know that the rule *about* pronouns has to be ignored. Otherwise, the result will not be sentences (f.) and (h.) but the following pair:

i. John went to Paris, but I've never been to there.

j. We wanted to leave at dawn, but Mary wasn't ready at then.

None of our native-speaker students ever produce sentences like (i) and (j), whether they pass our weekly test over adverbs and/or pronouns or not; they use their very good common sense and follow what they know to be the actual rules of their native language. And so do the teachers.

We teach our kids a rule that says: "The direct object is the receiver of the action." I find my students at the university, many of them experienced teachers of Language Arts, still firmly devoted to the repetition of this statement. And when I ask them for examples, they offer me sentences like these:

k. John loves pizza.

l. Mary knows the answer.

m. I hear the music.

Sentences, you will please note, in which nothing whatsoever happens to the pizza, the answer, or the music. I can stand up here knowing an answer until I drop in my tracks, and nothing will ever, ever happen to that answer: it will "receive" no action from me or my verb. The direct object "definition," is, a very large proportion of the time, a non-truth.

We never teach our students what direct objects really are; they nevertheless manage to go right on and use them. So far as I know, the only time that our failure to teach them the truth ever causes any problems is when we *test* them over direct objects in school, a situation in which it does not occur to them that what they know to be true is in any way relevant.

I could continue with such examples for many pages and would dearly love to do that, but it would be a great waste of trees. I will instead refer you to the *Harbrace Handbook* and all its clones, where you will find all the examples you will ever need, and move right along to transformational grammar.

Transformational grammar was supposed to *fix* all this, you will perhaps remember. Like the New Math. It was going to give us a way of teaching grammar that would finally tear away the blinders from the eyes of our students. And what happens in classes where transformational grammar is used? The students are required to memorize something called "the rules of transformational grammar," of course, and be tested over them, and behave as if they believed in them. And that is idiotic beyond description.

To begin with, there are no two living (or dead) liguistics scholars who agree on what the set of transformational rules is for any living language. No two—much less three or four! Even for such highly touted rules as *Passive* and *Identical Noun Phrase Deletion* and *Do-Support,* three that you may be familiar with if someone has dragged you through a linguistics course—even for rules like those, there is not even a consensus as to whether any one of the three *exists.* None of this has kept those rules and many others from being enshrined in entire series of Language Arts textbooks.

Secondly, for any proposed transformational rule, there are at least three—and usually more—proposed formulations in existence. Let's take something as simple as the *Imperative* rule, chosen because it contains the famous "Understood You," and no matter what your grammatical denomination you will have heard of the "Understood You"...and see what the situation is.

At M.I.T. we will find distinguished scholar John Ross teaching that the *Imperative* is a construction which has a deep structure roughly like "I order you, you leave," requiring two different grammatical operations, each of them a subspecies of deletion rule. We find distinguished scholar Adrian Akmajian at the University of Arizona claiming that the *Imperative* is not like that at all. Instead, it has a deep structure roughly like "*Imperative* you will leave"; and we need a rule to come along and take out "you will," while the *Imperative* piece itself is tidied up by the sound system of English. Then we have Suzette Haden Elgin, just retired from San Diego State University, ready and willing to fight both Ross and Akmajian on this issue.[6] I don't think there is any "will" in the deep structure of the *Imperative;* and I claim that it's just "*Imperative* you leave" with a rule that takes out "you" while the sound system tidies up the *Imperative* piece. Please remember that we are only *three* grammarians, and that the *Imperative* is a very simple rule indeed as transformational rules go.

Furthermore, each one of us is able to provide elaborate scientific arguments in support of our mutually contradictory proposals for the *Imperative.* The choice among our arguments is a matter of individual taste, like a preference for wheat bread over rye. It is amusing, if you are a linguist, to write lengthy papers presenting such arguments—and it fills up the space in the scholarly journals—but arguments that appear irrefutable at noon on Monday usually have been shot down within the week by at least two separate and equally compelling counter-proposals. I once had an engineering major who had ended up in my linguistics class because it was the only open upper division course that fit his schedule; he became so furious with the way transformational "rules" waffled about that one day he shouted, "If they taught engineering the way they teach transformational grammar, every bridge in America would fall down!" I understood his frustration and agreed with him, but the only consolation I could offer was a claim that the formulation of t-rules was not ordinarily a matter of life and death.[7]

When Chomsky said there was no place in the language arts classroom for transformational grammar, this is precisely what he meant. He meant: "We don't know what the rules are yet, or what they're like, and it may be a hundred years before we have a glimmer; and for adverb's sakes don't go and write a textbook about them!"

I give you my solemn word: there is no reason to assume that any set of transformatinal rules taught at this stage of the game is the right set. There is every reason to assume that it is the totally wrong set. There is no reason to assume that the formulation of any rule now being taught is the right formulation—and every reason to believe that it is the wrong one. The students, below the level of conscious awareness, know not only the entire set of right rules but their precise and proper formulation; it is that internalized knowledge which they use to speak and understand and read and write their native language.

So you see that it is precisely the same story with transformational grammar as it was with traditional grammar, or any other methodological framework. The students are forced to try to learn alleged facts that are at variance with what they know, somewhere inside them, to be the *truth*. They are required to behave as if they believed those so-called facts, in order to pass tests. And often they go on to teach them in language arts classrooms, with the usual dreary results.

You would think that someone would long ago have realized that this is why, in transformational grammar experiments, the one thing that has turned out to be useful is the sentence-combining exercises, not the rules. These exercises, if properly done, allow the students to use their own internalized knowledge without interference from the teacher, a wholesome situation.[8]

The only way that we could really find out whether the teaching of formal grammar in Language Arts classrooms at any level is any use would be if we taught students things that were true and that worked in the real world. Since we have so far only tried teaching them quantities of things that are false, and that will never work, the negative research results obtained up to this point are explained. And the question is as open as it ever was, because it has never yet been tested.

We can thank the miraculous human brain, it seems to me, for the fact that (in spite of our inexcusable bungling) human communication has not yet disappeared from the face of the English-speaking earth.

I am now in a position familiar to every would-be agent of change. The arguments *against* the status quo have been set out, to the best of my ability. And now comes the inevitable challenge: "That's all easy to say, I'm sure, and you might be right—but just what do you propose to offer in *place* of the status quo?"

If I were very young and very naive I might propose something in the Ivan

Illich genre, such as abolishing obligatory classes in Language Arts entirely, retiring all existing grammar books and workbooks, and waiting to see if civilization—like my engineering student's bridges—would collapse. If I were very young but less naive, I might propose that we do this: teach the kids to read and write (and by "write" I just mean the part about forming the letters and putting them on a page, I don't mean composition and rhetoric) and then let them alone. As an elderly matron with a lot of experience in a variety of trenches, I might at least propose a moratorium on all allegedly *remedial* courses in Language Arts until we knew more about what we were doing.

But I am well aware that the major practical effect of even that last and mildest proposal would be a drastic reduction in the number of jobs for teachers. It should *not* mean that; it should mean that teachers, having been relieved of a lot of superfluous labor, could put the time gained into teaching other things. Unfortunately, this is the real world and that is not the way the real world works.

Assume, then, that all this elaborate apparatus of Language Arts will remain in place, as no doubt it will. Do I then have anything to propose that could be done in the Language Arts classroom, that would constitute a testable use of formal grammar instruction, and that might actually prove useful?

Yes, as a matter of fact I do. I would like to describe briefly two rather different results of taking seriously what we do know about grammar, and using it to teach from.

Remember that one thing we know, and that can be proved by direct observation of the behavior of native speakers of English (or any human language), is that language behavior *is* governed by rules that are known to the student at some level of awareness. We know that this set of rules, except for minor details, is firmly in place by the time the child ordinarily enters the first grade. The problem is that the students do not have any direct access to the rules that they are using. At which point, three questions arise:

1) Can these rules be made accessible to the conscious awareness of the students?
2) If they can, will the students then make use of their new conscious knowledge in a way that will be reflected in an improved academic performance in Language Arts?
3) If so, can this be done inexpensively and without elaborate extra training for the teacher?

All three questions must be answered, you see. If there is a way to put the student in touch with his or her unconscious grammatical knowledge, but the result would not be reflected in performance, then it's probably no more worth doing than teaching him all the nitty-gritty details behind his ability to walk. If the students, once given a new conscious awareness of their grammar, *would* put it to effective use—but only after a tremendous investment of money and

time and energy, and only at the price of adding extensively to the already cumbersome teacher training programs—then it probably wouldn't be done, even if it were considered worth doing. This is not a time for requesting massive infusions of funds in education, as you will be well aware.

During the academic year 1975-76, the state of California gave Dr. Shirley Anne Rush and myself a grant at San Diego State University, to allow us to carry out a controlled experiment that would attempt to answer those three questions.

The design of the experiment was simple. We were given two sections of remedial English, roughly fifty students all told, from the many such sections being taught by SDSU's Study Skills department. Our two experimental sections met three days a week for a regular fifty-minute class period. On Monday and Wednesday of each week, the students completed in class a single inductive grammar problem in English; on Friday, again in class, they wrote a five-paragraph theme on a topic assigned on the spot. The themes were of the ancient model that I tried to resell in my doomed English composition text (*Pouring Down Words,* Prentice-Hall 1975, total sales perhaps forty copies): thesis paragraph, three supporting paragraphs, concluding paragraph, and each paragraph internal to the theme set up with the same structure. The grammar problems were something that will not be familiar to you unless you've taken some linguistics courses, and I will therefore insert one at this point for your examination. It's the twelfth problem in the series, which means that by the time it came along the students were accustomed to the problem format; earlier problems were a bit heavier on instructions and leading questions.

SAMPLE PROBLEM

PROBLEM TWELVE

YOUR NAME _____
DATE _____

English has a set of words called "reflexive" forms. it includes *myself, herself, yourself,* and so on. Look at the following data, answer the questions, and then write the rule for the use of these reflexives.

DATA:

1. I have always behaved myself.
2. He shaved herself with an aluminum can.
3. Some of the Watergate 5,000 perjured himself.
4. I have always behaved me.
5. Themselves controlled Bill and Mary and Phil.
6. Myself have always behaved I.

7. Some of the Watergate 5,000 perjured themselves.
8. They have always behaved myself.
9. If she can't control ourselves, she will have to leave the room.
10. He shaved himself with an aluminum can.
11. I have always behaved yourself.
12. She shaved ourselves with an aluminum can.
13. You should control yourself.
14. We bathed themselves.
15. Bill and Mary and Phil controlled themselves.
16. I have always behaved I.
17. I have always fainted myself.
18. If she can't control herself, she will have to leave the room.
19. Some of the Watergate 5,000 perjured yourself.
20. We bathed ourselves.
21. You should control myself.
22. We bathed yourself.

QUESTIONS:

1) Which of the sentences above are unacceptable? Put an asterisk in front of each one.
2) How is #11 different from #1?
3) How is #6 different from #1?
4) In some dialects of English the correct forms are the following:
   He behaved hisself.
   They behaved theirselves.
   Can you think of any reason why this should be so?
5) What does #17 tell you?
   RULE: _____
   _____

Each of the grammar problems used during the experiment was just like this one; each was carefully constructed to present the data for a single grammar rule of English.[9] The students worked the problems with no help of any kind, in class, with a Graduate Teaching Assistant present to serve as proctor but expressly forbidden to *teach*. Once the problem was finished, the student handed it in to the GTA and was then free to leave. The final ten minutes of each period was devoted to an informal discussion of the problem from the previous session, but attendance at that discussion was optional. On Friday, the

same system was followed, in that once a student had completed the theme assigned for the day, he or she was free to leave.

Now it's very important for me to stress that this was the *total* content of the course. There was no textbook, no grammar book, no outside reading. There was no homework. There were no drills, and no lectures. There was no prewriting, no revision, and no outside assigned writing. The only feedback a student got was a simple numerical grade written on the problems and essays by the GTA, with five points maximum possible for problems and twenty-five points maximum for the essays. No errors were circled; no comments were written in the margin. The students were told that the number grade on their essay was based on two factors: (1) how well they followed the model for the theme that they had been given; and (2) how interesting the theme was to read. (Any student who really wanted additional feedback could go see the GTA during office hours—an option rarely made use of.) No instructor other than the GTA-proctor ever entered the classroom.

At the end of the semester the two experimental sections had to take the same final exam as did the four other Study Skills sections participating in the experimental project. (Two of those sections had been taught traditionally; two had been given an individualized learning module curriculum. All four sections had had everything our students had not—drills, homework, revision, lectures, exercises, textbooks, critical commentary in the margins of their work, etc.)

The final exam had two parts. There was a standardized exam of the usual kind you are all familiar with. In addition, there was a timed essay on an assigned topic. The standardized exam was machine-scored; the essays were graded holistically by teams who graded all Study Skills finals at SDSU. In addition, all essays were graded again in a mass grading session for a number of California colleges and universities held at San Jose State. In both grading sessions the teams had been trained in the holistic grading system prior to actual grading; and all essays (including those in the experiment) were anonymous, identified only by a number.

Neither Dr. Rush nor I was a trained statistician, and we had been certain at the very beginning of our experiment that detailed statistical analysis would be required. We had therefore written into our grant proposal enough money to pay for an outside firm of consultants to do an extraordinarily complex computer analysis of all the data for us—and we had bushel baskets full of data for that firm to work with.

What we found out as a result of this experiment made me very happy. The data showed that there was *no* difference between the performance of our fifty students and the one hundred students who had been in the other four participating sections. Our students did no better and no worse, but they did just as well.

We would of course have been delighted if we could have shown that they

performed much better than the other students. We would have been very distressed if they had done worse, indicating that our experiment had done them some harm. But the results obtained seemed to us to present the following question inescapably: *If you get no better results in remedial classes when you torment students with all that other apparatus of books and drills and revisions and lectures and so on, what on earth is the good of it?* I will leave the answering of that question to you.

We were even more interested in the answers we obtained to our three original questions. First, it did prove possible to bring the grammar rules to conscious awareness. A typical answer to the problem on the reflexive was something like this: "If the person doing something and the person it's getting done to are the same person, then you have to use one of those 'self' words for the second time you mention the person. And if it's a guy you have to say 'himself,' and if it's more than one you have to use a plural word, and so on." This doesn't sound like the *Harbrace Handbook,* but it indicates that the student is now aware of what he or she is doing when the reflexive pronouns are used.

Second, it did turn out that as the students became aware of the grammar rules there was a corresponding change in their performance. Students whose essays at the beginning of the experiment had been written like reading primers showed a marked change toward a more mature syntax. When students did a problem on relative clauses on Monday or Wednesday, relative clauses turned up in their theme for that Friday and subsequent Fridays. Furthermore, although there had not been enough money in our grant to include an evaluation of anything except writing performance, the students themselves went to the GTA's with the report that they couldn't figure out why, but for some reason they could *read* better, and read faster, than they had been able to do prior to the course. Given what we know about the interconnection of reading and writing skills, this was no surprise to us, but we were very pleased about it. (Please remember that they did no reading in class except for the content of the grammar problems themselves.)

Third, the matter of expense and teacher training was settled to our satisfaction and then some. Given the fact that our method worked just as well as the most elaborate system the university could provide, it was significant that it was almost cost-free. Anyone at all, handed a set of those grammar problems and assigned theme topics, could "teach" the course. One GTA could serve as proctor for a room with five hundred students in it at a time, if a school wanted to do it that way. The GTA needed no training of any kind, since the sort of subjective judgments required for grading the problems and essays are surely available to any graduate student—remember that the GTA was not expected to mark errors, make comments or suggestions, or carry out any other of the functions of a composition teacher. The total cost of materials was the price of a Dittoed one-page problem two days a week for roughly fifteen weeks, and in a pinch you could dispense with that by having the problem written on the

blackboard for the students to copy. Essentially, the class required pencils and paper and a proctor—nothing more. No audiovisual equipment, no texts, no learning carrels, no language labs, no tutors....

If you are wondering why this method did not immediately get taken by the state of California and spread far and wide, the reason lies in the answer to our third question. There is a teacher job shortage. An enormous amount of money has already been invested in equipping learning labs and learning centers and multimedia learning circuses of all kinds. There are many many teachers whose classrooms have to be filled. What, then, would anybody want with a method of teaching English that appeared to eliminate at one fell swoop the need for any of those things? I understand that perfectly. I also understand why the places that *did* adopt the method, and used it successfully, were without exception schools in barrios, ghettos, labor camps, and well-funded private schools that did not have to concern themselves with such matters as teacher-pupil ratios.

One more thing I must tell you about this experiment, and then I will let it rest. There was considerable criticism from the state because the class was so *stark*. Administrators felt that it was awful (they used words like awful, and dreadful, and inexcusable) to set up a class with a teacher forbidden to teach or to help and with nothing to do but those problems and five-paragraph themes. They saw that structure as a flaw in our experiment. They were wrong.

The whole point of the experiment was to find out the answer to our three questions. That means that we had to eliminate every conceivable variable that could have ruined the results. We were trying to provide a curriculum that would be absolutely free of any kind of grammar mythology and would rely entirely on the student's own unconscious knowledge of the rules. If we had allowed any of the usual trappings of the Language Arts classroom, we couldn't have been even reasonably certain that the results we got were due to our method and not due to some one of those trappings, or some combination of them. If we had allowed any "teaching" to take place, we could not have demonstrated that the method required no addition to the teacher training curriculum. Those conditions had to be satisfied in order to make our experiment *worth* anything as an experiment (and I hasten to add that no student was enrolled in our sections without full understanding that it was an experiment, and that he or she had every right to request a non-experimental section meeting at the same time instead.)

I would be the first to suggest that teachers using the method of our experiment supplement it with anything they chose to use and could afford to use. But for the purposes of our experiment, the curriculum had to be the absolute bare-bones matter that it was.

The second type of "formal" grammar instruction I want to tell you about

is so different that you might not recognize it as grammar at all. But grammar is really the system by which the human brain processes language, actively and passively, aloud and in writing. And we are not making adequate use of what has been proven to be true about that system of processing. Let me give you just one example.

Long ago, psychologist George Miller began writing about somet'ing he referred to as "the magical number seven plus or minus two." It has been written about extensively enough in the meantime that I am sure you will all be familiar with it. This magic number has to do with the physiological limits on the functioning of human memory. And in research project after research project it has turned out that the number of chunks of information a human being can manage to deal with efficiently at one time is right around seven. It's no accident that telephone numbers have seven digits, broken into handy groups of three digits plus four digits. It's no accident that when little kids learn the alphabet they chunk it like this: ABCDEFG, HIJK, LMNOP; QRS and TUV; WXYZ. It's no accident that effective foreign language dialogues keep their sentences to about seven words in length. It's no accident that our Social Security numbers are nine digits long, and that the digits are broken up for us into groups of three and two and five. Everywhere in the real world business and government and other centers of power (not to mention wise little children!) make use of the natural limitations on memory for information processing in the human mind.

Now, one of the most irritating things in all this world for a student to have to deal with while trying sincerely to learn is a teacher's completely non-systematic information. Teachers who insist that something or other can't be taught, that "you just have to get a feel for it" or "have an ear for it" are not teaching. And among all these vague pronouncements, there is the sacred word, enshrined in many a million margins, thus: *AWKWARD!* The student who sees every assignment peppered with *AWKWARD!* and desiring to know what it might mean and how it could be avoided is usually treated to some variant of the "you just have to get a feel for it" incantation I just mentioned. Which is of no use at all to the student, and should be a source of embarrassment to the teacher.

After analyzing thousands (literally thousands) of graded essays from many levels of our educational system, all with *AWKWARD*'s in their margins, I noticed something very interesting. It was by no means always true—and I didn't have a computer to provide me with a good solid statistic—but a large percentage of the time it turned out to be whatever had been marked *AWKWARD* was a sequence of language that for one or another reason violated the magic number seven plus or minus two" constraint George Miller had pointed out so carefully. For example, compare the sentences below:

n. That John insisted on smoking his cigarette even though it obviously was making the woman sitting next to him cough annoyed me.

o. It annoyed me that John insisted on smoking his cigarette even though it obviously was making the woman sitting next to him cough.

You may not find either of these sentences felicitous, but you will surely agree that it is the (n) version that would be marked *AWKWARD*. It shares its flaw with the sentences that follow:

p. For John to insist on smoking his cigarette even though it obviously was making the woman sitting next to him cough would annoy me.

q. John's insistence on smoking his cigarette even though it obviously was making the woman sitting next to him cough always annoyed me.

r. Whether John insisted on smoking his cigarette just to be annoying or because he disliked this woman sitting next to him wasn't known.

In every one of these sentences except (o) there is what linguists call a *sentential* subject—either a straightforward sentence as in (n) and (p) or a reduced version of one as in the others. In processing such a sentence, either written or spoken, the person on the receiving end must ***hold the sentential subject in memory*** until the predicate is reached. When the sentential subject exceeds nine words or so (the magic number seven *plus* two) it becomes a burden for the memory, and the teacher interprets this phenomenon as *AWKWARD*. The (o) sentence puts the predicate right there at the beginning, and then the length of the material that follows is no longer so crucial.

No doubt it is possible to construct elegant sentences with sentential subjects that run to dozens of words—this is done by chunking those words into recognizable units for processing so that the number of such *chunks* does not exceed nine, and it requires a great deal of skill on the part of the writer. But it is no task for the student trying to learn to write acceptable Academic English.

It is very helpful to students, and will pay off nicely in improved performance, if you explain to them that there is this nine-item limit on language processing. You can just tell them, quite arbitrarily, never to use a sentential subject that is more than about seven words long, and give them examples to illustrate what you mean. They can understand that, and they can put it to actual use in the real world. They can even go on from there to examine *other* sentences they have written and had marked *AWKWARD* to see if they also contain constructions that run beyond nine words. Once the basic phenomenon—which is a part of formal grammar—has been pointed out to them, they are perfectly capable of making use of it, and of generalizing it to other situations. In time, and with experience, they may "get a feel" for when the rule can be broken—but while they are doing that, the arbitrary application of the rule will usually bring their grades up in every class where they must write or give oral presentations. And they can understand *why* they are doing what they are doing. Human bodies cannot run seventy-five miles an hour, no matter how hard they practice; human brains cannot deal with a dozen pieces of

unchunked information in language processing, no matter how hard they practice. This is very different from being told to "get a feel for" what *AWKWARD* means.

There. This is no program for revolution in the Language Arts classroom, nor is it intended to be. But it should give you some idea of the kinds of things that I think might be done instead of what has usually been done. Perhaps, after sufficient time and experience in teaching Language Arts information of the sort I've been describing, we would at last be prepared to put the ancient question about the value of formal grammar instruction to the test.

Notes

[1] I was brought up on Hillbilly Basics, you see, which included Latin as a required course for all eighth graders (even the football team.) It also included, from grade three on, not only having to turn in all your assigned spelling words worked into sentences, but meeting the requirement that those sentences constitute a narrative or expository paragraph. Which is why that ninth-grade teacher I mentioned didn't hesitate to require a précis every single Friday afternoon. I shall never forget the week that the material assigned for précis was "Thanatopsis."

[2] After reading the book carefully, I see no reason why the study should not have turned out identically in the elementary or college level Language Arts classroom, by the way.

[3] Most of this research has been done in either the traditional grammar or transformational grammar framework. I will therefore confine myself to those two, rather than dragging in structuralism, Montague grammar, relational grammar, and the rest of the teeming hordes. The only thing that would be extended in any way by my broadening the scope of the frameworks for discussion would be your boredom.

[4] If you'd like to test this for yourself, just ask any classroom full of native speakers of English to give you the rule for forming an English question, and listen to the silence.

[5] If this does *not* seem obvious, it is probably because you have been taught to consider sequences such as "in the kitchen" to be "prepositional phrases *being used* as adverbs." It is therefore not controversial to call such items "prepositional phrases"; and it isn't controversial to claim that pronouns can be substituted for *noun* phrases. The problem arises from the necessity to prove that "prepositional phrases" are only noun phrases, and thus eligible for pronominalization. We can do this by showing that "prepositional phrases" meet the tests for noun phrase identification, like this:

(a) NP's undergo CLEFTING

I saw the baby. It was the baby that I saw.
I sat in the kitchen. It was in the kitchen that I sat.

(b) NP's undergo PSEUDO-CLEFTING

I ate the apple. What I ate was the apple.
I sat in the kitchen. Where I sat was in the kitchen.

(c) NP's undergo TOPICALIZATION

I ate the apple. The apple, I ate.
I sat in the kitchen. In the kitchen, I sat.

(d) NP's can be questioned

I ate the apple. What did you eat?
I sat in the kitchen. Where did you sit?

(e) NP's can be relativized ....

The apple which I ate ....
The kitchen where (or in which) I sat ....

(f) NP's can be subjects

John is a professor.
In the kitchen is a noisy place to sleep.

(g) NP's can be pronominalized

I picked up the apple and ate it.
I went in the kitchen and sat there.

I see no way that an argument could be made that prepositional phrases and noun phrases are two different things, grammatically.

[6] I hasten to add that I am not retired just because I don't agree with Ross and Akmajian.

[7] I should point out that although this is true in a rough soap opera sense—the effects of a collapsed sentence being less immediately dramatic than those of a collapsed bridge—an inability to use English with ease and style exacts a heavy penalty over the long run in the lives of very real people. And the effects are as minimal as they are *only* for native speakers who have their own internalized system to fall back on. Our students whose native tongue is not English lack even this measure of protection.

[8] To do sentence-combining exercises correctly, the pieces to be combined must themselves be sentences of English. Here is my favorite (and quite real) example of how *not* to do it. The students were supposed to achieve the sentence: "She gave a quick flick of the wrist." The pieces they were given to work

with included such monstrosities as: "What she gave was a flick." "The flick was quick." "The flick was of her wrist." I promise you that if you confront students with that sort of garbage they will learn no more from sentence-combining exercises than from anything else. And heaven help those of your students who are not native speakers of English and must deal with your claim that a thing like "what she gave was a flick" is an acceptable sentence of the language.

[9] I am stretching the truth a tad, here, and would like to explain. When this problem was actually presented in our experimental sections, the asterisks had already been put in before the unacceptable sentences, and Question #1 did not appear. This was because of a variable over which Dr. Rush and I had no control. Our materials were intended for use only with native speakers of English, but we were given experimental sections in which some students were not English-dominant and others hardly spoke English at all. It would have been unfair to ask them to identify the unacceptable sentences—that is a task for native speakers only. We therefore had to modify our materials to allow for this situation; the problem as it appears here is what would have been used if our request for an all-native speaker class had been met.

Interestingly enough, this circumstance has turned out to be a blessing in disguise. The American Language Institute at SDSU, which teaches English to foreign students, went on to use our experimental method very extensively, with the modification that the data already had all unacceptable sentences marked for the students in advance. The technique was very successful, and a number of books and monographs have now been published demonstrating the method—which has spread far beyond SDSU in the ESL/TESOL curriculum.

SUGGESTED READING & REFERENCES

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Duran, D. 1978. *An Inductive Approach to Teaching Poetics.* Unpublished M.A. thesis, San Diego State University, San Diego, CA 92182.

Elley, W.B. *et al.*, eds. 1979. *The Role of Grammar in a Secondary School Curriculum.* New Zealand Council for Educational Research, Wellington, New Zealand. (Available from NCTE.)

Feare, R. 1980. *Practice with Idioms.* Oxford University Press, New York.

Both this thesis and that of Duran (above) use the inductive problem method described in this paper as the basis for an innovative curriculum—one in poetics and one in the teaching of English idioms to non-native speakers. The SDSU library also has two M.A. theses using this method to present an ESL curriculum; one is by Ronald Feare and the other is by Nancy Pipkin-Herzfeld. Finally, another such thesis, by Philip Lopez, is in preparation. All are unpublished, but could be obtained from the SDSU library.

Herndon, J. 1976. *A Survey of Modern Grammars:* 2nd edition. Holt, Rinehart and Winston, New York.

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Miller, G. 1975. *The Psychology of Communication.* Basic Books, Inc., New York. (See especially Chapter 2, "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information.")

O'Hare, F. 1973. *Sentence Combining: Improving Student Writing Without Formal Grammar Instruction.* NCTE, Urbana, Illinois.

Rush, S. and Elgin, S. 1977. *An Experimental and Evaluative Approach to Teaching Basic Writing Skills.* The Trustees of the California State University and Colleges. (This reference is included for the sake of scholarly etiquette, but to my knowledge it is not possible to obtain copies anywhere short of the Library of Congress. It is the monograph containing the history and statistical analysis of the experiment described in this paper.)

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The Author

Suzette Haden Elgin grew up in the Ozarks and has now retired there after teaching at San Diego State University. She did her graduate work at the University of California San Diego (with five small children at home to care for, which proves it can be done) and wrote her dissertation on the grammar of Navajo.

She has published four textbooks, seven novels, and a nonfiction book on verbal self-defense; she is now finishing a second book in the verbal self-defense series. Her specialties are memory and perception (especially as they are related to literacy) and the application of linguistics to problems in the processing and production of human language.

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